

Section 12. Red Drum

Introduction

The distribution of red drum (*Sciaenops ocellatus*) along the West coast of the Atlantic Ocean historically extended from Massachusetts southward to Florida, but in recent years the range has contracted. The northernmost extent of Atlantic red drum is currently the Chesapeake Bay region. Red drum tolerate a wide range of salinities and temperatures and can adjust rapidly to environmental change. Adult and subadult red drum are most often found in higher salinity waters from 20-40 ppt and rarely above 50 ppt. They spend time in nearshore and offshore ocean waters, sometimes returning to estuaries in summer months. Spawning occurs in the ocean and high salinity portions of estuaries. Red drum larvae are carried into Chesapeake Bay by deep-water currents and can be found in submerged aquatic vegetation beds on the eastern shore of the Chesapeake Bay. The distribution of juvenile red drum is less well known but they are often found in estuaries and coastal bays. This varying use of habitat is important to the management of the species.

Chesapeake Bay FMP

A Chesapeake Bay Program (CBP) Fishery Management Plan (FMP) for red drum was adopted in 1993 to implement the ASMFC recommendations to reduce overfishing and address Chesapeake Bay specific monitoring and research needs. Red drum are of low importance in the Maryland portion of the Bay although recreational fishermen take advantage of their occurrence in low rainfall years when the salinity is higher further up-Bay. Once the CBP Red Drum FMP was incorporated by reference into the Maryland regulations, it provided authority to implement size and creel limits for the recreational and commercial fisheries. It also promoted the reduction of red drum bycatch in other directed fisheries, recognized the need for additional monitoring information, and the importance of coordinating management measures along the coast. For a synopsis of management strategies and actions, refer to Table 12.1. Although the Chesapeake Bay FMP has not been updated to include recommendations from ASMFC Amendment 2, the Bay jurisdictions have adopted regulations that comply with the amendment.

Atlantic Coast FMP

The South Atlantic Fishery Management Council (SAFMC) adopted a federal fishery management plan (FMP) for red drum in 1990 that declared the Atlantic coast stock of red drum overfished throughout its range. The SAFMC FMP prohibited harvest of red drum in the federal exclusive economic zone (EEZ, 3 to 200 miles offshore) and this prohibition remains in effect. Because all subsequent fishing of the species would be in state waters, the plan recommended states adopt a target level of at least 30% escapement of immature fish to the spawning stock. The National Marine Fisheries Service (NMFS) is required to provide an annual update on the status of Atlantic coast red drum including a stock assessment; an estimate of maximum sustainable yield; an estimate of the standing stock and its age composition; escapement levels needed to meet stock requirements; a summary of current and historical information on the migratory movements of the stock; and available social and economic data for the fishery. Amendment 1 to the SAFMC FMP (SAFMC 1998b), specifies maximum sustainable yield (MSY) at 30% of the

spawning potential ratio (SPR); optimum yield at 40% SPR; and an overfishing level <30% SPR. Amendment 2 (SAFMC 1998), as part of a comprehensive habitat amendment, identified, described and recommended measures to protect Essential Fish Habitat (EFH) and EFH Habitat Areas of Particular Concern for Red Drum.

The Atlantic States Marine Fisheries Commission (ASMFC) adopted an interstate FMP for red drum in 1984, which was first amended in 1991 to adopt recommendations of the SAFMC. ASMFC Amendment 1 recommended that all states adopt regulations that would result in at least 30% escapement. It was evident that substantial reductions in fishing mortality (F) would be necessary to increase escapement to these levels. A staged approach was adopted with an intermediary goal requiring all states to implement or maintain harvest regulations to achieve a 10% spawning stock biomass per recruit (SSBR). All states complied with this recommendation and implemented new regulations or maintained stricter harvest regulations. While these measures led to increased escapement rates, overfishing was still occurring with spawning potential ratios (SPR) of less than 30% for both the northern and southern regions of the species range. Amendment II to the ASMFC FMP for red drum was developed in 2002. This amendment required that states implement creel and size limits to achieve a 40% SPR. It required adopting a 27" total length maximum size limit for red drum. All states are required to maintain all existing levels of restrictions and complete an annual compliance report (Appendix 7).

Current Chesapeake Bay regulations are as follows:

Maryland

Recreational Fishery: Size limit: 18-27"
Possession Limit: 1 fish/person/day

Commercial Fishery: Size limit: 18-25"
Possession limit: 5 fish/person/day

Virginia

Recreational Fishery: Size limit: 18-26" TL
Possession Limit: 3 fish/person/day

Commercial Fishery: No directed commercial fishery

Potomac River Fisheries Commission

Size limit: 18-25"
Possession Limit: 5 fish/person/day

Stock Status

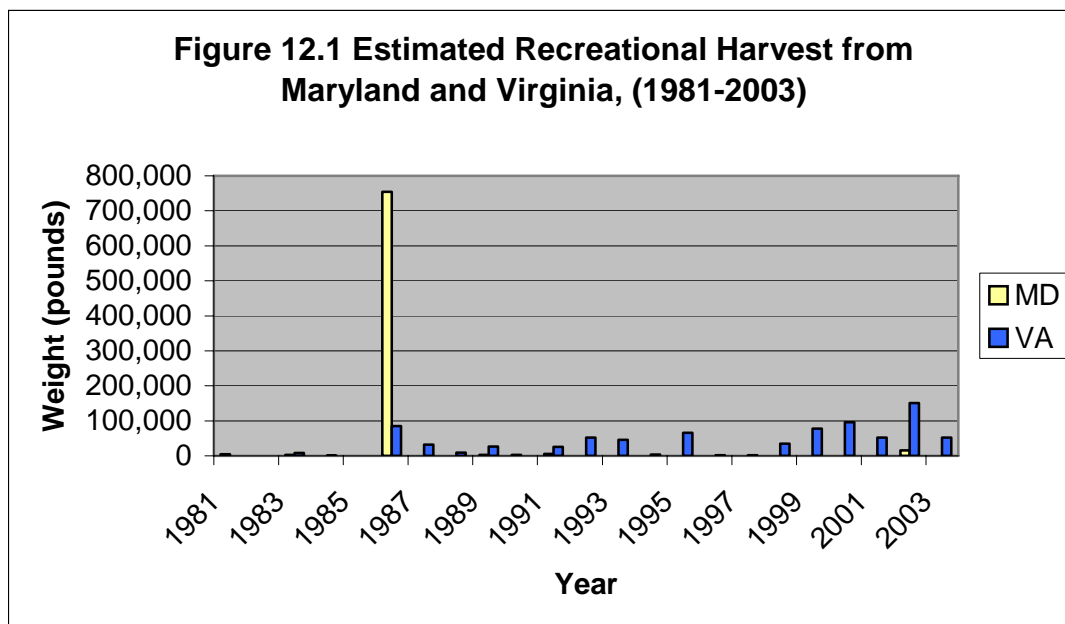
Based on the most recent complete stock assessment in 2000 (Vaughan and Carmichael 2000), the northern stock of red drum (North Carolina to New Jersey) remains overfished. Escapement rates are estimated at 18%, but may be overestimated due to a lack of commercial and recreational discard data. In the northern region, estimates of static SPR increased from

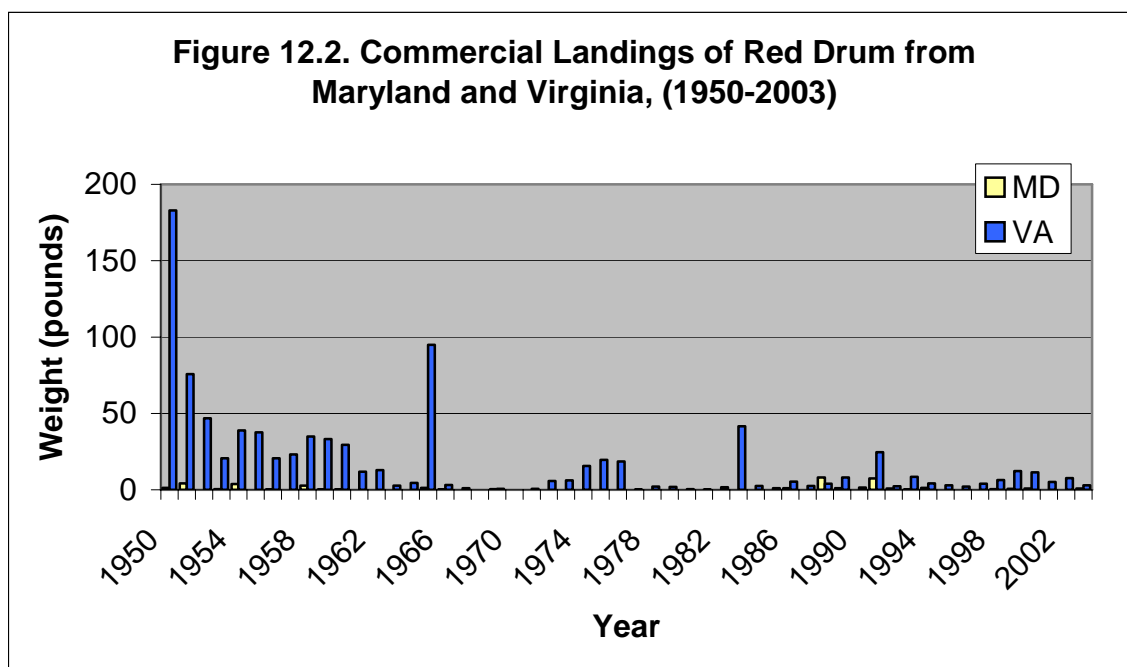
about 1.3% for the period 1987-1991 to approximately 18% (15% and 20%) for the period 1992-1998. The ASMFC Red Drum Board's first phase recovery goal of increasing %SPR to at least 10% appears to have been met, however, fishing regulations need to be maintained in order to reach the 30% minimum escapement goal and 40% SPR goal. The next stock assessment will take place in 2008.

Fishery Statistics

Estimated recreational landings of red drum have ranged from about 760,000 to 2,616,660 pounds annually from 1981 to 2003. Total coast wide harvest for 2003 was 1,568,831 pounds, an increase of almost 400,000 pounds from the previous year. In 2003, estimated recreational landings from Maryland were 0 pounds, a significant decrease from the estimated 15,154 pounds reported in the previous year. Estimated recreational landings from Virginia were 57,214 pounds, almost 100,000 pounds less than the estimate from the previous year (Figure 12.1).

Coastwide commercial landings of red drum show no temporal trend, ranging from about 58,000 to 433,000 pounds annually from 1960-2003. Since commercial harvest was prohibited in Florida waters in January 1989, North Carolina has been the major commercial harvester of red drum. North Carolina has imposed an annual cap of 250,000 pounds on its commercial fishery as well as size and catch limits. These measures should allow the stock to rebuild. In 2003, red drum commercial landings from the Chesapeake region totaled 819 pounds from Maryland and 2,839 pounds from Virginia (Figure 12.2) while North Carolina harvested 105,759 pounds. Only one other state reported harvest during 2003, New York reported catching 43 pounds.





***Recreational data reported from the Marine Recreational Fisheries Statistics Survey and Commercial data from the NMFS Annual Commercial Landing Statistics database.**

In 2004, estimated recreational landings for red drum from Maryland was zero, while estimated landings from Virginia were 4,975 fish with a total of 31,748 pounds (MRFFS 2004). The Potomac River Fisheries Commission recorded no red drum landings in 2004. In the 2004 commercial fishery for red drum, Virginia reported 650 pounds of red drum (Virginia Landings Bulletin, 2004) and Maryland reported 12 pounds (Maryland Department of Natural Resources, Fishery Statistics).

Monitoring Results

Few monitoring programs address the red drum population in Chesapeake Bay. Biological and fisheries data are too scarce to effectively understand the red drum population within Chesapeake Bay. Red drum migration into and out of the Bay is not well characterized and information on the stock-recruitment relationship is lacking. A couple of ongoing monitoring programs within Chesapeake Bay provide limited information on red drum.

The Virginia Game Fish Tagging Program (VGFTP), in its eighth year during 2002, is a cooperative project of the Virginia Marine Resources Commission (Virginia Saltwater Fishing Tournament) and Virginia Institute of Marine Science (VIMS). This tagging effort is focused on key species that are typically not sampled by other ongoing research programs in Chesapeake Bay and its associated nearshore Atlantic waters. The resulting database is aimed at improving understanding of the dynamics of fish populations that support Virginia's marine recreational fisheries.

According to the 2002 tagging report, the VGFTP tagging effort for red drum totaled 2,727 fish, which is more than twice the number of red drum tagged in either 1999 or 2000. 2002 was one of the strongest year classes of juvenile red drum in the Chesapeake Bay in decades. Tagged red drum were primarily 12-16 inches in length. Top tagging locations and numbers of fish Tagged at each location were as follows: Lynnhaven Inlet waters (1,014), the Elizabeth River Hot Ditch (352), Elizabeth River (227), the Eastern Shore Barrier Islands (279+ fish; including larger fish 30-47 inches), York River Yorktown Power Plant Hot Ditch (139), the Buckroe Pier (117), Rudee Inlet waters (92), and Hampton Roads Bridge Tunnel/Willoughby Spit Jetties area (64). Many other areas accounted for tagging of 20-40 juvenile or “puppy” drum, including, but not limited to: Mobjack Bay, Hungars Creek, off Windmill Point/Dividing Creek, Piankatank River, Poquoson Flats, Poquoson River, Middle Ground/Inner Middle Ground Shoals, and Harrison Fishing Pier.

Research and Monitoring Needs

Managers lack important biological and fisheries data to effectively manage the red drum resource. Data from both the recreational and commercial fisheries is in need of improvement. Although Virginia continues its tagging efforts, Maryland does not have a tagging program. At this time, there are other priorities and red drum catch in Maryland waters is minimal. The ASMFC recommends that each state should develop an ongoing red drum tagging program that can be used to estimate both fishing and natural mortality rates and movements. The ASMFC recommends that each tagging program include concurrent evaluations of tag retention, tagging mortality, and angler tag reporting rates. Although Bay jurisdictions do collect fisheries data for red drum, improved catch/effort estimates are necessary, including increased effort to intercept night fisheries. The effort to improve information on the red drum stock in Chesapeake Bay and adjacent ocean waters should include biological data on discards.

The ASMFC specified that states should maintain annual length-at-age keys, evaluate effects of water temperature and depth of capture, and determine methods for restoring red drum habitat and/or improving existing environmental conditions that adversely affect red drum production. In Chesapeake Bay, red drum are dependent upon submerged aquatic vegetation (SAV) as refugia for juveniles.

Conclusion

The red drum stock is considered overfished throughout its range. Fishing regulations are in place to promote recovery of the stock in federal and state waters. Bay states have adopted size limits and creel limits for their recreational and commercial fisheries in order to comply with coastal recommendations for stock protection. The Chesapeake Bay red drum stock is not well characterized. New monitoring of the stock is necessary to determine stock-recruitment ratios and migration rates in and out of the Bay.

References

Atlantic States Fisheries Commission. Fishery Management Plan for Red Drum. October 1984.

Chesapeake Bay Program. Chesapeake Bay Red Drum Fishery Management Plan, Agreement Commitment Report 1993. April 1994.

Red Drum Plan Review Team. 2004 Review of the ASMFC Fishery Management Plan for Red Drum (*Sciaenops ocellatus*). November 8, 2004.

Virginia Marine Resources Commission. Pertaining to Speckled Trout and Red Drum. Regulation 4 VAC 20-280-10 ET SEQ.

Table 12.1. 1993 Chesapeake Bay Program Red Drum Implementation (updated 10/05)

Section	Action	Date	Comments
1. Overfishing	1.1.1 Virginia will continue to enforce a 5 fish creel limit and an 18 inch minimum size limit with one fish over 27in in the recreational fishery.	1992 Continue	In compliance with coastal recommendations. VA has decreased its size limit and now allows fishing of 18-26" red drum. A new possession limit of 3 fish has been adopted.
	1.1.2 Maryland and the PFRC will implement a 5 fish creel limit and an 18 in minimum size limit with one fish over 27in in the recreational fishery	1994 Continue 2001	In compliance with coastal recommendations. MD has a recreational size limit for red drum of 18-27" and a commercial size limit of 18-25". The possession limit is 1 fish/day for the recreational fishery and 5 fish/day for the commercial fishery. PRFC has a size limit of 18-25" and a possession limit of 5 fish.
	1.2a Jurisdictions will investigate the potential for using bycatch reduction devices in nonselective fisheries	1992 Continue	The bycatch of immature red drum has not been a problem in Chesapeake Bay fisheries because small fish are infrequently encountered. Bycatch reduction devices that are currently used should indirectly increase the escapement of juvenile red drum.
	1.2b Virginia and Maryland will work with the South Atlantic Fishery Management Council (SAFMC) and ASMFC to develop and require more efficient gear to reduce bycatch and/or discards.	1992 Continue	MD and VA appointed representatives to the ASMFC/SAFMC Red Drum Advisory Panel. .
2. Stock Assessment and Research Needs	2.1 Jurisdictions will support fecundity research and tagging studies to determine movements of juvenile red drum and develop juvenile indices. Maryland and Virginia will continue the Baywide trawl survey of estuarine finfish species and crabs.	1993 Continue	The VA red drum tagging program is ongoing The tagging program includes a fishery independent study and a volunteer recreational study. Tag recapture data indicates a southward, late fall migration of juvenile red drum out of the Bay and along the Virginia coast. Future tag returns should provide information about the movements of these fish upon reaching sexual maturity. VIMS will continue a trawl survey if funding continues. ASMFC has recommended that all states implement a tagging program for red drum.

Table 12.1. 1993 Chesapeake Bay Program Red Drum Implementation (updated 10/05)

Section	Action	Date	Comments
	2.2 VMRC Stock Assessment Program will continue to collect biological data from commercial catches of red drum	1993 Ongoing	
	2.3a Jurisdictions will continue commercial fisheries statistics	Continue	
	2.3b Virginia will implement a limited and/or delayed entry program and a mandatory reporting system for commercial licenses.	1993 Continue	Implemented in January 1993.
	2.3c Virginia and Maryland will continue to supplement the Marine Recreational Statistics Program	Continue	
	2.3d Maryland will continue the Baywide Trawl Survey	Continue	
3. Habitat Issues	3.1 Jurisdictions will continue to set specific objectives for water quality goals and review management programs established under the Chesapeake 2000 agreement	Continue	SAV beds are important red drum habitat. Water clarity and water quality goals were adopted by the Chesapeake Bay Program signatory states in 2003 that will help in achieving a SAV restoration goal of 185,000 acres by 2010.

PFRC= Potomac River Fisheries Commission

SAV= Submerged Aquatic Vegetation

VIMS= Virginia Institute of Marine Science